HEALTH CARE AND THE CLIMATE CRISIS: INHALERS & THE ENVIRONMENT

PROBLEM STATEMENT:

The impact of the climate crisis on health is well documented, and the health care industry – the sector that seeks to address the health needs of individuals and populations – is responsible for an estimated 8.5 percent of greenhouse gas emissions in the United States (U.S.). Studies show that pressurized metered dose inhalers (pMDIs), commonly used for treatment of asthma and chronic obstructive pulmonary disease (COPD), release hydrofluorocarbon propellants (HFCs, a harmful greenhouse gas), which contribute to the climate crisis – a factor that exacerbates the very diseases inhalers are meant to treat. Despite their overwhelming negative environmental impact and existence of lower emitting alternatives like dry powder and soft mist inhalers and nebulizers, HFC pMDIs still have a *75 percent share* in the U.S. inhaler market.

APPROACH

On December 8, 2022, Ways and Means Committee then-Chair Richard E Neal sent letters to a sample of nine health care stakeholders to request information on the environmental impacts of pMDIs – and what the sector is doing to transition to more environmentally friendly products.

A sample of respondents were selected from three groups: 1) providers, 2) payers, and 3) clinical guidelines organizations. Specifically, respondents included:

- American Academy of Pediatrics;
- American Medical Association;
- American Academy of Family Physicians;
- American Academy of Allergy, Asthma, and Immunology;
- American Thoracic Society;
- America's Health Insurance Plans;
- Pharmaceutical Care Management Association;
- Global Initiative for Asthma *(did not respond to request);* and
- Global Initiative for Chronic Obstructive Lung Disease.

> *"PMDIs have an enormous negative environmental impact. In the U.S. alone, HFC propellants in pMDIs were projected to contribute 2.5 million metric tons of carbon dioxide equivalent (CO2e) in 2020, which is equal to the yearly carbon emissions of 543,478 passenger vehicles."*
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> *-then-Chair Richard E. Neal, December 8, 2022*

BACKGROUND: INHALERS & THE ENVIRONMENT

Clinical use

Providers commonly prescribe pMDIs to patients who experience asthma and COPD. Many patients experiencing an acute asthma or COPD exacerbation receive short-acting β2-agonists (SABA), such as albuterol and ipratropium bromide, via pMDIs, which provide immediate relief but simultaneously release harmful HFC greenhouse gasses that can worsen air pollution and exacerbate these chronic conditions. Environmentally safer alternatives to pMDIs already exist through dry powder inhalers (DPIs), soft mist inhalers (SMIs), and nebulizers for most patients over the age of five – but they are often significantly more expensive than pMDIs, creating financial barriers for many patients (some are not even available in U.S. markets).

Environmental impacts

In 2019, medical providers dispensed an estimated 55,344,000 pMDIs in the U.S., which contain HFC propellants – powerful greenhouse gases. In the U.S. alone, HFC propellants in pMDIs were projected to contribute 2.5 million metric tons of carbon dioxide equivalent (CO2e) in 2020, which is equal to the yearly carbon emissions of 543,478 passenger vehicles. According to a 2022 report, inhalers alone represent three percent of total National Health Service emissions in England.

Federal efforts to date

Congress enacted the American Innovation and Manufacturing (AIM) Act of 2020 as part of the Consolidated Appropriations Act of 2021 (P.L. 116-260). The AIM Act directs the Environmental Protection Agency (EPA) to phase down the production and use of HFCs by 2036. Each calendar year, the EPA must determine the quantity of allowances for the production and consumption of these substances. An initial framework rule was published in 2021; allowance allocations for 2024 and beyond were published in 2022. An October 2023 EPA final rule restricted the use of certain higher-Global Warming Potential HFCs in aerosols, foams, refrigeration, air conditioning, and heat pump products and equipment. The rule did *not* apply to metered dose inhalers.

Obstacles to reducing the use of pMDIs

Despite the EPA's work to phase down the use of HFCs, respondents noted a number of market-driven and clinical factors that currently impede the transition from pMDIs:

Market-driven factors

1. Cost & insurance coverage: The most often-cited obstacle to transitioning patients away from pMDIs (where clinically appropriate) was cost and coverage. All respondents who answered the question noted the higher cost of alternatives, putting them out of reach of many patients. Alternatives are often brand name drugs with patent protections that are on higher formulary tiers, which often impedes access, respondents said.
2. Availability of alternatives: In some cases, respondents said, insurance plans do not even cover alternatives. For example, one respondent explained that a non-pMDI inhaler is available for Albuterol, but it is made by only one company, with limited insurance coverage, making it "cost-prohibitive."
3. Drug shortages: A couple respondents pointed to recent drug shortages in the inhaler space as a barrier to change.

Clinical factors

1. Efficacy: A couple of respondents discussed the difficulty of using DPIs compared to pMDIs, explaining that a subset of patients have difficulty getting the medication in the DPIs into their lungs – a key reason why children under four cannot use DPIs.
2. Education & awareness: Some shared that both patients and providers will need education about the differences between DPIs, SMIs, and nebulizers and pMDIs to more effectively spur the transition.

Current or future initiatives & goals

None of the respondents said they had a current education initiative to address environmental health harms of pMDIs, and just three of eight expressed interest in engaging in these issues in the future.

"Supporting patient access to asthma management medications that do not have deleterious effects on the environment is part of a holistic approach to asthma management, given that environmental degradation further worsens the conditions that exacerbate asthmas."

--American Academy of Pediatrics

Other respondents did not believe they had any role to play the discussion.

***"It is beyond the scope of physicians and patients themselves to effectively and meaningfully address the larger environmental impacts of pDMIs* [sic]."**

--American Academy of Family Physicians

Role of the federal government

Most respondents did not answer the question posed about the role of the federal government in supporting a clinically appropriate transition of the field. Those who did highlighted the broad importance of:

1. *Better aligning incentives – to spur the development and approval of generic, low-cost environmentally friendly alternatives*
2. *Addressing research gaps to study the implementation of alternatives to overcome transitional challenges.*

"Any new proposed legislation to switching inhaler platforms in the US must incorporate FDA [Food and Drug Administration] and patent reform as well as a coordinated effort with CMS [Centers for Medicare & Medicaid Services] and insurance companies to ensure that new formulations do not trigger significantly higher costs and poorer access to needed medications for patients."

- Global Initiative for Chronic Obstructive Lung Disease

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